

Translation

PATENT COOPERATION TREATY

PCT/JP2003/015800



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference NC-278	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/JP2003/015800	International filing date (<i>day/month/year</i>) 10 December 2003 (10.12.2003)	Priority date (<i>day/month/year</i>) 11 December 2002 (11.12.2002)
International Patent Classification (IPC) or national classification and IPC C08G 73/10, C07C 217/76, G02F 1/1337		
Applicant NISSAN CHEMICAL INDUSTRIES, LTD.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☐ (*sent to the applicant and to the International Bureau*) a total of _____ sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (*sent to the International Bureau only*) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/> Box No. I	Basis of the report
<input type="checkbox"/> Box No. II	Priority
<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/> Box No. VI	Certain documents cited
<input type="checkbox"/> Box No. VII	Certain defects in the international application
<input type="checkbox"/> Box No. VIII	Certain observations on the international application

Date of submission of the demand 03 June 2004 (03.06.2004)	Date of completion of this report 01 July 2004 (01.07.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2003/015800

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:

- ☐ international search (under Rules 12.3 and 23.1(b)).
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☒ The international application as originally filed/furnished

☐ the description:

pages _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ the claims:

pages _____, as originally filed/furnished

pages* _____, as amended (together with any statement) under Article 19

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ the drawings:

pages _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP03/15800

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-7	YES
	Claims		NO
Inventive step (IS)	Claims	1-7	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-7	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Document 1: WO, 97/30107, A (Nissan Chemical Industries, Ltd.), 21 August, 1997. Full text, & EP, 905167, A1, & US, 6111059, A, & JP, 9-278724, A.

Document 2: EP, 663391, A1 (F. Hoffmann-La Roche AG), 19 July, 1995, Examples, & JP, 07-206803, A, & US, 5521160, A.

Document 3: JP, 5-27244, A (Japan Synthetic Rubber Co., Ltd.), 05 February, 1993. Full text (Family: none).

The inventions of claims 1 to 5 related to a diaminobenzene derivative represented by the general formula [1], but this compound is described in none of the documents cited in the ISR and can hardly be easily manufactured based on the conventional technology by a person skilled in the art. The invention described in document 1 relates to a diaminobenzene derivative having a long-chain group in a side chain and suitable for obtaining good orientation ability of liquid crystals in the case where a polyimide is obtained by reaction with tetracarboxylic acid. This invention apparently represents a technology that is the closest to the inventions described in claims 1 to 5. However, according to the inventions of claims 1 to 5, a methylene ether bond is present as a bond group with the side chain, and this feature is neither described nor suggested in document 1.

The inventions of claims 6 and 7 relate to a liquid crystal orientation treatment agent comprising at least one of a polyimide precursor or polyimide synthesized by using the aforementioned diaminobenzene derivative as part of the starting material. Therefore, this agent is not described in any of the documents cited in the ISR and cannot be easily manufactured by a person skilled in the art based on the conventional technology.